

2022 Provost's Affordable Course Material grant

ASTR 1420: Adoption of the free OpenStax textbook

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### **Background and Implementation Plan:**

I have taught ASTR 1420 regularly over the past decade, and I have offered this course almost every spring semester and its online version in every summer semester. This course is usually at full capacity (30) every time being offered. Similar to other science textbooks, the textbook for this course (Life in the Universe by Bennet and Shostak) is not cheap (\$138). If my proposal is accepted, then I will adopt a free textbook from OpenStax ("Astronomy" ISBN-10:

1-947172-24-7) and completely transform the course structure so that students do not need to pay anything for course material. With Provost's Affordable Course Material grant, I will (1) transform old lecture notes (for about 30 lectures), (2) create about 20 online quizzes, and (3) develop a test bank for exams.

In a typical academic year when ASTR 1420 is offered in either Fall or Spring semester and ASTR 1420/E is offered in a summer semester, about 60 students are enrolled. With the adoption of the OpenStax Astronomy textbook, \$8,280 ( $\$138 \times 60$ ) will be saved per year.

Course material development will be pursued during 2022 Summer and the newly structured ASTR 1420 course will be offered during the 2022 Fall semester.

### **Budget**

I request \$5,000 to support my summer salary. With this support, during 2022 summer, I will devote 100% of time in developing course materials mentioned in the earlier section (lecture notes, online quizzes, and test bank for exams).

### **Additional Measure of Impact**

The transformed ASTR 1420 course will be offered twice in an academic year in the near future (once for fall or spring semester and once for a summer semester). The newly adopted OpenStax textbook, redesigned lecture notes, homework, and assessment materials will be incorporated into the University of Georgia's eLC environment. The content of eLC course materials will be shared with any future ASTR 1420 instructors hence the great possibility of future sustainability. In each semester when ASTR 1420 is offered, the teaching instructor will update materials when necessary. This periodic update and modification will promote the long-term commitment of the new course structure.